

Assistive Technology

By Shawn E. Latham

For the past century the lives of people with disabilities have improved. In the early 1900's and before if a person had a disability they were generally looked at as an outcast and shut off from the public. Some of the problems were social in that people with disabilities were looked at as weak. However, many problems existed because there were no technologies out there to assist this group. This has changed in the past couple decades as the computer revolution has taken shape. In this article I hope to explain what assistive technology is, how to use it and how to get it?

Assistive Technology is any product or piece of technology that is used to improve functionality of a person with a disability. This can be a simple door handle or a high tech communication board. The key is that this product assists the person so that they can become more productive. There are thousands of assistive products out there for all kinds of activities. There are products for employment, health, home life and community life. Some products are designed for business so that customers can use them while others are made for specific individuals. For example business might have an accessible check out stand that all customers use while one customer uses a communication device to converse with a store employee.

In America many people have one or multiple impairments or disabilities. For the purposes of this article I will classify all disabilities into five groups. These groups include visual impairments, hearing impairments, mobility impairments, learning impairments, and communication impairments. All people with a disability fall into one or more of these groups. The group tells us what equipment or software the person might need to succeed in life. Let's take somebody with Cerebral Palsy similar to my own disability. That person could have multiple impairments that would require different technologies to assist them. It is important that people check out a variety of assistive technologies. I have used text to speech products geared for people with learning impairments that assist me in communicating with large groups.

It is important to remember that while assistive technology is created for people with disabilities these technologies are used in the general public as well. Tools such as magnifiers or color background can assist all people with eyestrain. Voice recognition is another classic example. A person with a mobility impairment uses voice recognition to communicate with the computer when they can't communicate with a mouse or a keyboard. However, voice recognition is so popular that businesses are now using it for their employees so they can work faster. Creating programs, devices and equipment for general use is good practice since it raises demand and lowers price.

The Technology

Now let's discuss technologies associated for each impairment starting with a visual impairment. A person with a visual impairment has limited to no sight. This can make it hard for them to acquire information about the physical world through the sense of vision. This means they must start to use the other senses more. There are many devices one might use. Some of the popular ones are magnifiers such as (*ZoomText* or *Magic*), Screen readers like (*Jaws* or *Window Eyes*), large size keyboards, talking book readers and recorders, Closed Circuit TV's, and finally brail scanners and printers. Each one of these makes it possible for people to attain information they might need to accomplish tasks.

Magnifiers change the magnification size of the screen they can also change screen colors to assist the user. Screen Readers read what's on the screen and describe the layout for blind users. Users are trained on the keyboard to use shortcuts instead of the mouse. Talking book readers look like CD players that can read special formatted books on CD using Daisy format. Users can easily get to a certain page and add bookmarks

People with hearing impairments have partial to total loss of their hearing. This requires them to use their other senses to understand what is happening in the physical world. Some people read lips while others use sign language. The most common technology used is closed caption either on Television sets or computer devices. There are also TTY's to use the phone, online phone relays and chat rooms, alerting systems to notifying them of an event, hearing aids and amplified hearing devices.

A person who has mobility impairment has limited motor use to move, manipulate objects or interact with the physical world. Devices such as accessible equipment, switches for computer use, voice recognition, wheelchairs, and talking books. There is also a large selection of accessible equipment devices such as adjustable desks (that raise and lower), adjustable monitors, different size and style keyboards and more.

A person with speech impairment has difficulty communicating with others because it is physically hard for them to make sounds or words. Communication devices such as communication boards, text to speech programs and phone amplifiers assist the person in getting the message across. Communication boards like those made by Dynamo and Prentke Romich are made for those who need substantial help speaking. Users can also try smaller boards similar to keyboards to help them. One technique I use is to turn my text into an mp3 or advanced sound file then I will playback the file when I have to do speeches.

A person with a learning impairment could have a cognitive disability that is a lower intellectual ability than their peer group or have trouble inputting, integrating, memorizing or outputting information. Learning devices such as literacy programs, personal organizers, word prediction, text to speech application and portable typewriters help them excel at school or on the workforce.

Literacy programs like *WYNN*, *Read and Write* and the *Keys To Access* assist users in reading, and writing. They have word prediction, talking dictionaries and basic tools for writing. *WYNN* is very unique in that it can increase word fonts and change background colors in its environment. *Read and Write* and *Keys to Access* use the resources of other main applications and enhance them with their own tools.

A person may investigate other technologies by attending conferences or going online. Once online they should check out the Closing the Gap <http://www.closingthegap.com> or CSUN <http://www.csun.edu/cod/conf/index.htm> websites or links to various assistive technology companies. Closing the GAP and CSUN are two national conferences people can attend to see technology in person, and attend meetings. The public can contact organizations like Independent Living Centers, Easter Seals, Washington Assistive Technology Alliance, the Division of Developmental Disabilities and the Division of Vocational Rehabilitation for more assistance.

Once someone knows what they want they should talk to an organization such as the ones listed above if they need assistance in buying the product. One should know what the product will be used for and find the appropriate organization or agency to assist with funding. For example Medicare or Medicaid might pay for a medical product.

The final step is learning how to use the new product or device. This can be easily done by attending a seminar, reading the manual, or seeking help from a professional. I hope this short guide can assist those who need products to help them function in society.

Shawn Latham is a member of the Washington State Developmental Disabilities Council and lives in Puyallup, Washington. Sean is also a member of Self-Advocates in Leadership (SAIL). Sean started researching assistive technology while he was working at Central Washington Disability Resources in Ellensburg. He has made presentations on assistive technology in his local community, including local Work Source centers. Sean's goal is to bring awareness to the public that assistive technology can bring a brighter future for individuals with disabilities.